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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------------|------------------|
| 09/765,775 | 01/19/2001 | Friedmund Nagel | 5646-00300 | 9805 |
| 7590 | 01/05/2005 | | EXAMINER WOO, STELLA L | |
| Jeffrey C. Hood Conley, Rose, & Tayon, P.C. PO Box 398 Austin, TX 78767-1246 | | | ART UNIT 2643 | PAPER NUMBER |

DATE MAILED: 01/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/765,775

Applicant(s)

NAGEL, FRIEDMUND

Examiner

Stella L. Woo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 13, 23-26, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Publication JA 07098591 A (hereinafter "Ishikawa") in view of Tomisawa et al. (US 5,850,458, hereinafter "Tomisawa").

Regarding claims 1, 13, 23, 35, Ishikawa discloses a device (duct speaker arrangement) having:

at least one first sound transducer (microphones 2 and 3);
an electronic control unit (cancellation signal generator 4); and
at least one second sound transducer (speaker 5).

Ishikawa differs from claims 1-4, 13, 23-26, 35 in that although it teaches the generation of a cancellation signal, it does not specify that the microphone converts sound waves into first signals which are a measure of the frequency, amplitude and phase of the sound waves. However, Tomisawa teaches the well known detection of a sound wave's frequency, amplitude and phase in order to generate a cancellation signal having the same frequency, same amplitude and opposite phase (col. 1, lines 36-42; col. 4, line 61 – col. 5, line 14) such that it would have been obvious to an artisan of ordinary skill at the time of invention to determine the frequency, amplitude, and phase of detected sound

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wave, as taught by Tomisawa, within the device of Ishikawa in order provide an effective cancellation signal.

Regarding claims 2 and 24, in Ishikawa, speaker 5 emits compensating sound waves in the direction of the gas flow (see Fig. 2).

Regarding claims 3 and 25, in Ishikawa, speaker 5 includes a streamlined casing 5-4 (see Figure 4).

Regarding claims 4 and 26, in Ishikawa, speaker 5 is centrally located (see Figure 1).

3. Claims 8-9, 17, 20, 30-31, 39, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Tomisawa, as applied to claims 1-4, 13, 23-26, 35 above, and further in view of Cain et al. (US 5,457,749, hereinafter "Cain").

The combination of Ishikawa and Tomisawa differs from claims 8-9, 17, 20, 30-31, 39, 42 in that it does not specify a pipe silencer or a cooling device. However, Cain teaches sound absorbing material within chambers 61, 68, 70 and pipe liner material to provide additional silencing (col. 5, lines 5-12; col. 6, lines 23-29) and radiators 480A and 480B to provide cooling (col. 13, lines 4-10) such that it would have been obvious to an artisan of ordinary skill to incorporate such well known muffler features, as taught by Cain, within the combination of Ishikawa and Tomisawa in order to protect and acoustically isolate a muffler pipe when incorporating noise cancellation device.

4. Claims 6-7, 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Tomisawa, as applied to claims 1 and 23 above, and further in view of Geddes (US 5,432,857).

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The combination of Ishikawa and Tomisawa differs from claims 6-7 and 28-29 in that it does not specify a catalytic converter. However, Geddes teaches the well known inclusion of a catalytic converter (54) as forming part of the exhaust conduit 44 (col. 5, lines 50-67) such that it would have been obvious to an artisan of ordinary skill that a catalytic converter, as taught by Geddes, would form a part of the exhaust conduit of the combination of Ishikawa and Tomisawa.

5. Claims 10-12, 14-16, 32-34, 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa and Tomisawa, as applied to claims 1, 13, 23, 35 above, and further in view of Fischer et al. (US 5,748,748, hereinafter "Fischer").

The combination of Ishikawa and Tomisawa differs from claims 10-12, 14-16, 32-34, 36-38 in that it does not specify a comparator unit, an output unit or a service monitoring unit. However, Fischer teaches the desirability of incorporating such a diagnostic feature within a vehicle noise modification system by comparing detected oscillations with a defined threshold oscillation and emitting an acoustical and/or optical signal to indicate an abnormality (Abstract; col. 9, lines 20-42; col. 10, line 55 – col. 11, line 67). It would have been obvious to an artisan of ordinary skill to incorporate such a diagnostic device, as taught by Fischer, within the noise cancellation system of Ishikawa and Tomisawa in order to provide an additional service to the vehicle owner, that is, to indicate detected abnormalities while reducing engine noise.

6. Claims 18, 21, 40, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa, Tomisawa and Cain, as applied to claims 17, 20, 39, 42 above, and further in view of Geddes for the same reasons applied to claims 6-7, 28-29 above.

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7. Claims 19, 22, 41, 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa, Tomisawa, Cain and Geddes, as applied to claims 18, 21, 40, 43 above, and further in view of Fischer for the same reasons applied to claims 10-12, 14-16, 32-34, 36-38 above.

8. Claims 5, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa in view of Tomisawa, as applied to claims 1 and 23 above, and further in view of PCT WO 97/20307 (hereinafter "Everingham").

The combination of Ishikawa and Tomisawa differs from claims 5 and 27 in that it does not specify the microphone being arranged in the speaker. However, Everingham teaches such a well known arrangement within a noise reducing device (microphone 42 located at speaker 30) such that it would have been obvious to an artisan of ordinary skill to incorporate such an arrangement, as taught by Everingham, within the combination of Ishikawa and Tomisawa.

Response to Arguments

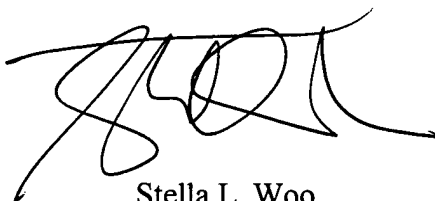
9. Applicant's arguments with respect to claims 1-44 have been considered but are moot in view of the new ground(s) of rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stella L. Woo whose telephone number is (703) 305-4395. The examiner can normally be reached on Monday-Tuesday, Thursday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703) 305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Stella L. Woo', with a stylized, cursive script.

Stella L. Woo
Primary Examiner
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